

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims:

1. (Currently Amended) An apparatus for providing link layer security in a Physical Layer Transceiver (PHY) comprising:

analog circuitry configured to transmit to, and receive data from, a data transmission medium;

digital circuitry directly coupled to said analog circuitry, said digital circuitry configured to transmit data/control signals to, and receive data/control signals from, a Media Access Controller (MAC);

a PHY communications module coupled to said analog and digital circuitry;

a crypto engine coupled to said digital circuitry;

a crypto communications module directly coupled to said crypto engine; and

an interface link operatively coupling said PHY communications module ~~being~~ operatively coupled to said crypto communications module.
2. (Original) The apparatus of claim 1, wherein said PHY communications module is configured to provide connectivity through a MDIO/MDC interface, and said PHY controls the operation of said crypto device.
3. (Withdrawn) The apparatus of claim 1, wherein:

said PHY communications module is configured to provide connectivity through a MDIO/MDC interface;

said crypto communications module is configured to provide connectivity through an interface other than a MDIO/MDC interface.

4. (Currently Amended) The apparatus of claim 1, wherein:
said PHY communications module is configured to provide connectivity through a MDIO/MDC interface; and
said crypto communications module is directly coupled to said MDIO/MDC interface.
5. (Currently Amended) The apparatus of claim 1, further comprising a master communications module directly coupled between said PHY communications module and said crypto communications module.
6. (Original) The apparatus of claim 1, wherein said crypto communications module is configured to provide connectivity through a MDIO/MDC interface, and said crypto device controls the operation of said PHY.
7. (Previously Presented) The apparatus of claim 1, wherein said PHY communications module is configured to provide connectivity through a communication medium.

8. (Previously Presented) The apparatus of claim 7, wherein communication medium is configured to communicate with a plurality of devices.
9. (Original) The apparatus of claim 8, wherein said plurality of devices include at least one device that communicates at the PHY level, and at least one device that performs security functions.
10. (Previously Presented) The apparatus of claim 7, wherein said communication medium communicates with at least one device that performs both PHY and Security functions.
11. (Currently Amended) An apparatus for providing link layer security in a Physical Layer Transceiver (PHY) comprising:
 - analog circuitry means for providing connectivity to a data transmission medium;
 - digital circuitry means directly coupled to said analog circuitry means, said digital circuitry providing connectivity to a Media Access Controller (MAC);
 - PHY communications means coupled to said analog and digital circuitry means;
 - crypto engine means coupled to said digital circuitry means;
 - crypto communications means directly coupled to said crypto engine means; and
 - an interface link means operatively coupling said PHY communications means ~~being operatively coupled~~ to said crypto communications module.

12. (Original) The apparatus of claim 11, wherein said PHY communications means being configured for providing connectivity through a MDIO/MDC interface, and said PHY controls the operation of said crypto device.
13. (Withdrawn) The apparatus of claim 11, wherein:
PHY communications means being configured for providing connectivity through
a MDIO/MDC interface;
said crypto communications means being configured for providing connectivity
through an interface other than a MDIO/MDC interface.
14. (Currently Amended) The apparatus of claim 11, wherein:
said PHY communications means is configured to provide connectivity through a
MDIO/MDC interface; and
said crypto communications means is directly coupled to said MDIO/MDC
interface.
15. (Currently Amended) The apparatus of claim 11, further comprising master
communications means directly coupled between said PHY communications
means and said crypto communications means.

16. (Original) The apparatus of claim 11, wherein said crypto communications means is configured to provide connectivity through a MDIO/MDC interface, and said crypto device means controls the operation of said PHY.
17. (Previously Presented) The apparatus of claim 11, wherein said PHY communications means is configured to provide connectivity through communication medium means.
18. (Previously Presented) The apparatus of claim 17, wherein said communication medium means is configured to communicate with a plurality of devices.
19. (Original) The apparatus of claim 18, wherein said plurality of devices include at least one device that communicates at the PHY level, and at least one device that performs security functions.
20. (Previously Presented) The apparatus of claim 17, wherein said communication medium communicates with at least one device that performs both PHY and Security functions.